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Revisiting Trade-Institution Nexus: A Comparative
Analysis of South Asia and Global Commodity Trade
Controlling for Institutional Homogeneity and Migration

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Revisiting Trade-Institutions Nexus:

**A comparative analysis of
South Asian and global
Commodity Trade controlling
for institutional homogeneity
and migration**

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Outline

- Background
- Conceptual Basis and Data
- Estimation Strategy
- Implementation of the analysis
- Results
- conclusions

1. Background

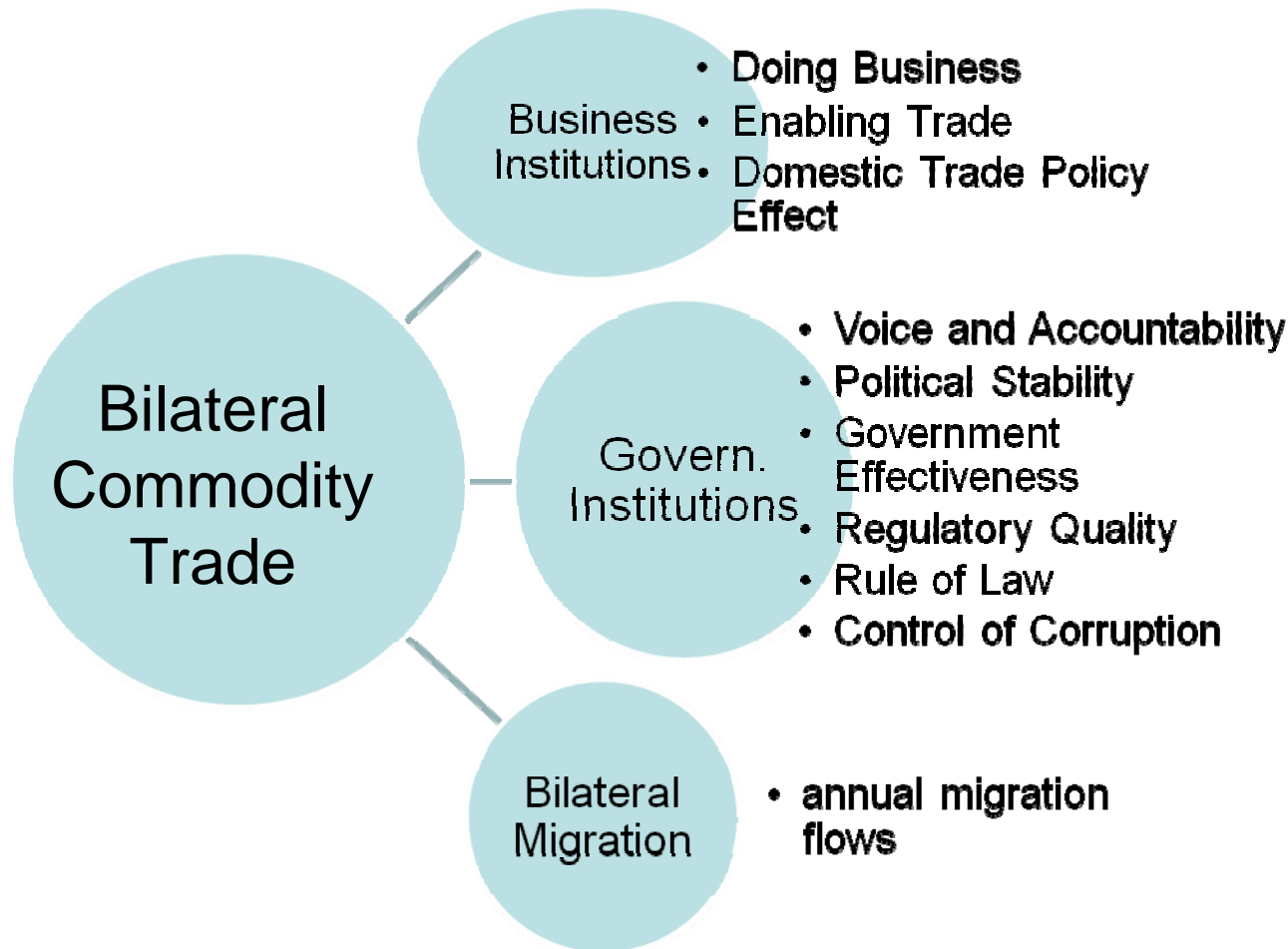
Distance Effect in International Trade...

- According to the data available for any recent year, many country pairs have a low volume of trade and even more country pairs have no trade at all.
- Although there are obvious differences in economic strength and size between countries, economic and demographic differences alone would not justify such disproportionality (Linders et al., 2008).

Background...

- Thus, this paper draws attempts further articulation of the Distance Puzzle in terms of institutional quality resemblances and human migration flows.
- Aim is to extend the conceptualization of distance to incorporate
 - 1)the homogeneity of institutional environment of bilateral partners
 - 2)the structural impacts human migration between the partners
- Strategy adopted is to estimate a series of specifications of the GRAVITY model of trade controlling for multiple indicators of institutional quality resemblance and migration effect.

2. Conceptual Basis and Data



Trade Specific Institutions

- **Quality of Business Institutional Environment:**
Doing-business Data
- **Institutional Bottlenecks at Trading Interfaces :**
Enabling Trade Data
- **Domestic Trade Policy Effect :** trade restrictiveness index by Hiscox and Kastner (2002)

Doing Business Data

- (1) Starting a business;
- (2) Registering property;
- (3) Getting credit;
- (4) Contract Enforcement.

Enabling Trade Data

- (1) Market access,
- (2) border administration,
- (3) transport and communications infrastructure, and
- (4) the business environment.

1. Tariffs and non-tariff barriers 2. Proclivity to trade 3. Efficiency of customs administration 4. Efficiency of import-export procedures 5. Transparency of border administration 6. Availability and quality of transport infrastructure 7. Availability and quality of transport services 8. Availability and use of ICTs 9. Regulatory environment 10. Physical security.

Domestic Trade Policy Effect

- I use the ICY index of trade restrictiveness by Hiscox and Kastner (2002) as a measure of the level of policy restrictiveness to trade by a country. The index developed via a gravity estimation reports values for 76 countries.
- I predict the trade policy effect index values for the remaining countries in my data set making use of the fact that an extremely high (0.87) correlation exists between this index and the GDP per capita (purchasing power parity) values for 2005. Since I am not including the GDP per capita values in the gravity estimation, the above imputation of values does not produce any statistical anomaly to the gravity regressions.

Governance Specific Institutions

- 1. *Voice and Accountability (VA)* – measuring the extent to which a country's citizens are able to participate in selecting their government
- 2. *Political Stability and Absence of Violence (PV)* – measuring perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means,
- 3. *Government Effectiveness (GE)* – measuring the quality of public services, the quality of the civil service and the degree of its independence from political pressures,
- 4. *Regulatory Quality (RQ)* – measuring the ability of the government to formulate and implement sound policies and regulations
- 5. *Rule of Law (RL)* – measuring the extent to which agents have confidence in and abide by the rules of society
- 6. *Control of Corruption (CC)* – measuring the extent to which public power is exercised for private gain

3. Estimation strategy

- Liu (2007) believes the case of more than 50 percent of the observations reporting zero trade flows as a standard corner solution problem, and suggests the Tobit model
- However, Tobit model suffers from the inability to handle residuals which are not normal and homoscedastic.
- Based on the recommendations of many including Silva and Tenreyro (2006), I estimate the gravity model using the **Poisson maximum likelihood** method.

Problem of Handling Multiple Indicators

- I perform (classical) multidimensional scaling (MDS) on data from doing business dataset, and the enabling trade dataset, in order to reduce the dimensionality of data while preserving the variability.

Creating Homogeneity Variables

- The homogeneity of the institutions is represented by the ratio between the index values (in the case of the six governance variables) or multidimensional scores (in the case of doing business score and enabling trade score) or the trade restrictiveness score of the two trading partners falling between 0.75 and 1.33. All the institutional variables were thus coded as a dummy variable with 1 for homogeneity and 0 otherwise.

VARIABLE DESCRIPTION

Code	Description
Dependent Variable	
imports	bilateral imports value
Common Gravity Variables	
l_gdpx	log of GDP~exporter
l_gdpm	log of GDP~importer
l_distw	log of weighted distance
contig	contiguity
comlang_off	common language official
PTA	bilateral membership of the same political/ trade association
Governance Institutional Homogeneity Variables	
psnv_sim	similarity of political stability and non violence
cc_sim	similarity of control of corruption
va-sim	similarity of voice and accountability
ge_sim	similarity of government effectiveness
rq_sim	similarity of regulation quality
rl_sim	similarity of rule of law
Trade Institutional Homogeneity Variables	
db_sim	similarity of doing business index (multidimensional scaled)
etr_sim	similarity of enabling trade index (multidimensional scaled)
icyhat_sim	similarity of trade restrictiveness index
Migration	
l_mig	Log of bilateral migration flow

4. Implementation of the Analysis.

- In implementing the gravity model for both Global and South Asian samples, the institutional variables were introduced in two blocks cumulatively along with the key gravity variables. First, trade related institutional homogeneity variables. Second, governance related institutional homogeneity variables.

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- Based on the emerging evidence of the potential trade enhancing effects of bilateral migration (Gould, 1994; Head and Reis, 1998 and Karayi, 2007 among others) , I include the log of bilateral migration as an argument of the gravity model at the final stage.

Estimations...contd

- the analysis is carried out in two stages: First, the global bilateral flows and next, the South Asian exports and imports.
- structural differences between the highly developed countries and the developing countries with regard to economic environment and institutional environment motivate decomposition of the analysis based on the development status of the trading partners.

Estimations.... Contd.

- In the South Asian analysis, exports from South Asia to the whole world is in the 1st subsample. I control for South Asian destinations using a dummy variable. Similarly for the 2nd subsample considering Imports to South Asia from the world, I control for south Asian origins using a dummy variable.

GLOBAL ANALYSIS

Stage No	Variables	Regression No	Sample Description
Stage 1.1	Dependant variable: imports	1	global
	Independent variables: basic gravity variables	2	north-north
		3	north-south
		4	south-north
		5	south-south
Stage 1.2	Dependant variable: imports	1	global
	Independent variables: basic gravity variables + trading institutional homogeneity variables	2	north-north
		3	north-south
		4	south-north
		5	south-south
Stage 1.3	Dependant variable: imports	1	global
	Independent variables: basic gravity variables + trading institutional homogeneity variables + governance institutional homogeneity variables	2	north-north
		3	north-south
		4	south-north
		5	south-south
Stage 1.4	Dependant variable: imports	1	global
	Independent variables: basic gravity variables + trading institutional homogeneity variables + governance institutional homogeneity variables + migration	2	north-north
		3	north-south
		4	south-north
		5	south-south

SOUTH ASIAN ANALYSIS

Stage No	Variables	Regression No	Sample Description
Stage 2.1	Dependant variable: imports Independent variables: basic gravity variables	1	South Asian exports
		2	South Asian imports
Stage 2.2	Dependant variable: imports Independent variables: basic gravity variables + trading institutional homogeneity variables	1	South Asian exports
		2	South Asian imports
Stage 2.3	Dependant variable: imports Independent variables: basic gravity variables + trading institutional homogeneity variables + governance institutional homogeneity variables	1	South Asian exports
		2	South Asian imports
Stage 2.4	Dependant variable: imports Independent variables: basic gravity variables + trading institutional homogeneity variables + governance institutional homogeneity variables+ migration	1	South Asian exports
		2	South Asian imports

5. Summary of Results

Results from the global sample

- trade specific institutional indicators behave in a “direction-invariant” manner.
- With Homogeneity of Rule of Law indices, the trade enhances significantly for all bilateral flows. In contrast to the (trade)direction invariant behavior of trade specific institutional homogeneities, the governance institutional homogeneities display sensitivity to the direction of flow , i.e. NS vs. SN.

- Block-wise inclusion of the three categories of explanatory variables improve the model fit without sacrificing the significance.
- Across all samples the migration displays a positive and significant (at 1% level) trade enhancing effect

Results from the South Asian sample

- Homogeneity in the DB score and Domestic Policy Effect score indicate trade–detering effects while the homogeneity of ET score indicate significant trade enhancement.
- According to semi-elasticities of South Asian partner dummy, both export and import flows tend to increase when trading with partners outside of the region.

- Homogeneities in CC and RQ indicate trade-enhancing impacts.
- migration effect display consistent trade enhancing impact here too.
- trade deterring impact of the South Asian partners dummy is consistent in all the eight regressions. Other consistent effect observable is the trade enhancing impact of the homogeneity of ET score

6. Conclusions

- For the **global analysis**, the trade specific institutional homogeneity does not display significant trade enhancing effects in general. **In fact, in a number of instances, the 3 trade specific homogeneity variables display trade deterring impacts.**
- On the other hand , homogeneity in rule of law and political stability appear to be significantly trade enhancing among the governance related institutional variables.

- Homogeneity in enabling trade variable consistently show trade enhancing effects in the South Asian analysis while the other two variables of the same category act as deterrents.
- Among the governance homogeneities, control of corruption and regulation quality display consistent trade enhancing impacts for South Asia.

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